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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/828,638	04/06/2001	Robert Edward Touhsaent	2001B025/RMH10185(PL00-24	5507

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EXAMINER	
AHMED, SHEEBA	
ART UNIT	PAPER NUMBER
1773	

DATE MAILED: 03/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/828,638	TOUHSAENT, ROBERT EDWARD	
	Examiner	Art Unit	
	Sheeba Ahmed	1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 December 2003 and 09 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☒ Claim(s) *21-23* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 1/9/04
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 18, 2003 has been entered.

Information Disclosure Statement

2. The information disclosure statement filed on January 9, 2004 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

Response to Amendment

3. Amendments to claims 1-20 have been entered in the above-identified application. New claims 21-23 have been added. **Claims 1-23 are pending.**

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-5, 9-11, 15-18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen et al. (US 5,662,985) in view of Curatolo (US 5,804,301) and Houde (US 6,406,775B1).

Jensen et al. disclose a printable facestock structure comprising a polymeric film substrate having on a first surface an adhesive anchor layer and on a second surface an ink base layer wherein the ink base layer may be an iminated polymer of methyl methacrylate, an alkyl acrylate and an ethylenically unsaturated carboxylic acid (Column 1, lines 34-37, lines 44-46 and Column 4, lines 14-67). The coatings are applied to the substrate by any known method and wherein the substrate has been surface treated and primed ***(thus indicating that a primer layer is present between the substrate and the coating layer)*** (Column 9, lines 3-7). The coating is applied in an amount such that it results in a dry evenly distributed coating having a coat weight of 0.9 to 1.1 g/m^2 ***(thus indicating that the dry coating weight is at least 0.1 g/1000 in^2)*** (Column 9, lines 13-14). The coatings may be formulated with solid finely divided inorganic material, such as colloidal silica, to function as a slip agent ***(thus indicating that the coating comprises dispersed particulates)*** (Column 10, lines 13-16). An adhesive layer

(corresponding to the optional adhesive layer of claim 20) may be positioned adjacent to the adhesive anchor layer (Column 10, lines 24-27). Curatolo, on the other hand, discloses radiation curable compositions, which may be deposited on polymeric films to improve their printability and other surface characteristics (Column 1, lines 5-9). The composition comprises polyfunctional acrylate oligomers such as epoxy acrylates (Column 6, lines 8-21) and imparts improved ink adhesion, chemical resistance, moisture resistance and weathering resistance to the substrates (Column 11, lines 56-64).

Jensen et al. and Curatolo do not teach that the anionic acrylic polymer is crosslinked and specifically crosslinked with a polyfunctional aziridine.

However, Houde discloses compositions that are useful as printing media (Column 1, lines 6-10) and wherein the binder is crosslinked to provide improved abrasion and weather resistance using a polyfunctional aziridine (Column 10, lines 22-25). The polyfunctional aziridine reacts with reactive groups such as carboxylic acids and becomes completely incorporated into the coating without any leaching or out-gassing (Column 11, lines 1-10).

Accordingly, it would have been obvious to one having ordinary skill in the art to crosslink the anionic acrylic polymer, comprising the ethylenically unsaturated carboxylic acid monomer, with a polyfunctional aziridine given that Houde discloses that crosslinking the binder provides improved abrasion and weather resistance and that polyfunctional aziridine reacts with reactive groups such as carboxylic acids and becomes completely incorporated into the coating without any leaching or out-gassing.

With regards to the limitation that the anionic acrylic polymer is crosslinked to an extent sufficient to improve resistance of said coating to isopropyl alcohol and/or hot water, the Examiner takes the position that such a limitation is inherently met by the crosslinked coating taught by Jensen et al. given that the composition of the coating and the composition of the crosslinker as taught by Jensen and Houde is identical to that of the claimed invention. Furthermore, with regards to the limitations that the anionic acrylic polymer is crosslinked by exposure to at least room temperature, the Examiner would like to remind the Applicants that the determination of patentability for product claims containing process limitations is based on the product itself and not on the method of production. If the product is the same or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985) and also see MPEP 2113. In this case, the product (i.e., the printable plastic film, the printable coating composition or the label) is obvious despite the process limitations of crosslinking the anionic acrylic polymer by exposure to at least room temperature.

5. Claims 1, 2, 6-8, 15-18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen et al. (US 5,662,985) in view of Curatolo (US 5,804,301) and Karim (US 5,883,193).

Jensen et al. disclose a printable facestock structure comprising a polymeric film substrate having on a first surface an adhesive anchor layer and on a second surface an ink base layer wherein the ink base layer may be an iminated polymer of methyl

methacrylate, an alkyl acrylate and an ethylenically unsaturated carboxylic acid (Column 1, lines 34-37, lines 44-46 and Column 4, lines 14-67). The coatings are applied to the substrate by any known method and wherein the substrate has been surface treated and primed ***(thus indicating that a primer layer is present between the substrate and the coating layer)*** (Column 9, lines 3-7). The coating is applied in an amount such that it results in a dry evenly distributed coating having a coat weight of 0.9 to 1.1 g/m^2 ***(thus indicating that the dry coating weight is at least 0.1 g/1000 in^2)*** Column 9, lines 13-14). The coatings may be formulated with solid finely divided inorganic material, such as colloidal silica, to function as a slip agent ***(thus indicating that the coating comprises dispersed particulates)*** (Column 10, lines 13-16). An adhesive layer ***(corresponding to the optional adhesive layer of claim 20)*** may be positioned adjacent to the adhesive anchor layer (Column 10, lines 24-27). Curatolo, on the other hand, discloses radiation curable compositions, which may be deposited on polymeric films to improve their printability and other surface characteristics (Column 1, lines 5-9). The composition comprises polyfunctional acrylate oligomers such as epoxy acrylates (Column 6, lines 8-21) and imparts improved ink adhesion, chemical resistance, moisture resistance and weathering resistance to the substrates (Column 11, lines 56-64).

Jensen et al. and Curatolo do not teach that the anionic acrylic polymer is crosslinked and specifically crosslinked with an epoxy silane using a catalyst such as imidazole.

However, Karim discloses a thermosettable composition which allows adhesion to be maintained under conditions of high humidity (Column 1, lines 6-8). The composition comprises polymerizable acrylic or methacrylic acid ester, an epoxy resin, a silane coupling agent and an accelerator (Column 1, lines 34-40). Useful silane agents include epoxy silanes used with an imidazole accelerator. Imidazoles are insoluble in the methacrylate and epoxy components and particularly suitable as accelerators because of their ability to extend shelf life of compositions (Column 6, lines 20-26).

Accordingly, it would have been obvious to one having ordinary skill in the art to crosslink the anionic acrylic polymer with an epoxy silane using an imidazole accelerator given that such compositions allow adhesion to be maintained under conditions of high humidity and given that imidazoles are insoluble in the methacrylate and epoxy components and particularly suitable as accelerators because of their ability to extend shelf life of compositions. With regards to the limitation that the anionic acrylic polymer is crosslinked to an extent sufficient to improve resistance of said coating to isopropyl alcohol and/or hot water, the Examiner takes the position that such a limitation is inherently met by the crosslinked coating taught by Jensen et al. given that the composition of the coating and the composition of the crosslinker as taught by Jensen and Karim is identical to that of the claimed invention. Furthermore, with regards to the limitations that the anionic acrylic polymer is crosslinked by exposure to at least room temperature, the Examiner would like to remind the Applicants that the determination of patentability for product claims containing process limitations is based on the product

itself and not on the method of production. If the product is the same or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985) and also see MPEP 2113. In this case, the product (i.e., the printable plastic film, the printable coating composition or the label) is obvious despite the process limitations of crosslinking the anionic acrylic polymer by exposure to at least room temperature.

6. Claims 1, 2, 12-14, 15, 16, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen et al. (US 5,662,985) over Houde (US 6,406,775 B1) and Saint Victor (US 6,225,389).

Jensen et al. disclose a printable facestock structure ***(corresponding to the printable plastic film of claim 1 or the label of claim 20)*** comprising a polymeric film substrate ***(corresponding to the substrate layer of the claimed invention)*** having on a first surface an adhesive anchor layer and on a second surface an ink base layer ***(corresponding to the printable coating composition layer of the claimed invention)*** wherein the ink base layer may be an iminated polymer of methyl methacrylate, an alkyl acrylate and an ethylenically unsaturated carboxylic acid ***(corresponding to the iminated anionic acrylic polymer of the claimed invention)*** (Column 1, lines 34-37, lines 44-46 and Column 4, lines 14-67). The coatings are applied to the substrate by any known method and wherein the substrate has been surface treated and primed ***(thus indicating that a primer layer is present between the substrate and the coating layer)*** (Column 9, lines 3-7). The coating is applied in

an amount such that it results in a dry evenly distributed coating having a coat weight of 0.9 to 1.1 g/m^2 ***(thus indicating that the dry coating weight is at least 0.1 g/1000 in^2)*** Column 9, lines 13-14). The coatings may be formulated with solid finely divided inorganic material, such as colloidal silica, to function as a slip agent ***(thus indicating that the coating comprises dispersed particulates)*** (Column 10, lines 13-16). An adhesive layer ***(corresponding to the optional adhesive layer of claim 20)*** may be positioned adjacent to the adhesive anchor layer (Column 10, lines 24-27). Houde, on the other hand, discloses compositions that are useful as printing media (Column 1, lines 6-10) and wherein the binder is crosslinked to provide improved abrasion and weather resistance using a polyfunctional aziridine (Column 10, lines 22-25). The polyfunctional aziridine reacts with reactive groups such as carboxylic acids and becomes completely incorporated into the coating without any leaching or out- gassing (Column 11, lines 1-10).

Jensen et al. and Houde do not teach that the ink base layer further comprises an epoxy acrylate.

However, Saint Victor discloses a substantially zero VOC, water-dispersible coating composition for printing or non-printing purposes and comprising an epoxy acrylate oligomer. The composition significantly reduces the amount of energy and times required to effect curing. The oligomer is formed by reacting an epoxide with an unsaturated acid such as acrylic or methacrylic acid. Useful epoxides include glycidyl ethers of polyhydric alcohols (Column 2, lines 12-15, 20-24, and 59-67) such as diglycidyl ether of diethylene glycol or dipropylene glycol (Column 4, lines 9-15). The

product of the reaction is an epoxy methacrylate compound having a main chain of polyepoxide and both terminals of a methacrylate group (Column 5, lines 25-30). To prevent the premature or undesirable polymerization of the product or the reactants, it is advantageous to add a vinyl inhibitor, such as hydroquinone, to the reaction mixture (Column 6, lines 16-27).

Accordingly, it would have been obvious to one having ordinary skill in the art to add an epoxy acrylate oligomer, formed by reacting an glycidyl ether of diethylene glycol or dipropylene glycol with an unsaturated acid such as acrylic or methacrylic acid, and to add a vinyl inhibitor, such as hydroquinone, to the ink base layer composition disclosed by Jenson et al. given that Saint Victor specifically teaches that their epoxy acrylate has low VOC, is water dispersible and significantly reduces the amount of energy and times required to effect curing and that the hydroquinone prevents the premature or undesirable polymerization of the product or the reactants. With regards to the limitation that the anionic acrylic polymer is crosslinked to an extent sufficient to improve resistance of said coating to isopropyl alcohol and/or hot water, the Examiner takes the position that such a limitation is inherently met by the crosslinked coating taught by Jensen et al. given that the composition of the coating and the composition of the crosslinker as taught by Jensen and Houde is identical to that of the claimed invention.

Furthermore, with regards to the limitations that the anionic acrylic polymer is crosslinked by exposure to at least room temperature, the Examiner would like to remind the Applicants that the determination of patentability for product claims

containing process limitations is based on the product itself and not on the method of production. If the product is the same or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985) and also see MPEP 2113. In this case, the product (i.e., the printable plastic film, the printable coating composition or the label) is obvious despite the process limitations of crosslinking the anionic acrylic polymer by exposure to at least room temperature.

Response to Arguments

7. The Applicants traverse the rejection of claims 1-5, 9-11, 15-18, and 20 under 35 U.S.C. 103(a) as being unpatentable over Jensen et al. (US 5,662,985) in view of Curatolo (US 5,804,301) and Houde (US 6,406,775B1), the rejection of claims 1, 2, 6-8, 15-18, and 20 under 35 U.S.C. 103(a) as being unpatentable over Jensen et al. (US 5,662,985) in view of Curatolo (US 5,804,301) and Karim (US 5,883,193) and the rejection of claims 1, 2, 12-14, 15, 16, and 19 under 35 U.S.C. 103(a) as being unpatentable over Jensen et al. (US 5,662,985) over Houde (US 6,406,775 B1) and Saint Victor (US 6,225,389). Applicants submit that the present Specification contains objective evidence of patentability, which serves to rebut any case of obviousness against the presently claimed invention.

The Examiner has again reviewed the experimental data provided in the Specification and specifically on Pages 16-19 of the Specification and takes the position that the claimed invention is not commensurate in scope with the showing. Specifically,

Examples 5-8 (which describe the present invention) employ a specific anionic acrylic polymer *(NeoCryl XK-90 resin which is an iminated polymer)*, a specific epoxy acrylate *(DA-911M which is an epoxy acrylate from propylene glycol)* and a specific crosslinking agent *(an epoxy silane or a polyfunctional aziridine)* and the resultant coating composition is coated on a specific corona treated substrate (*three layer substrates comprising an oriented polypropylene core layer and a pair of ethylene-propylene copolymer skin layers)*. The Examiner further takes the position that there is no evidence to show that the results obtained in Examples 5-9 extend to all anionic acrylic polymers, all epoxy acrylates, all crosslinking agents, and all substrates.

Allowable Subject Matter

8. Claim 21-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheeba Ahmed whose telephone number is (571)272-1504. The examiner can normally be reached on Mondays and Thursdays from 8am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on (571)272-1516. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sheeba Ahmed
Art Unit 1773
March 16, 2004